

REMARKS

Claims 1, 2, 4, 5, 9-11, 13-21 and 39-61 are under consideration herein (claims 3, 6-8, 37 and 38 having been previously cancelled, and dependent claims 50-61 having been added by this Amendment). Previously withdrawn claim nos. 12 and 22-36 have been cancelled herein.

Claims 39, 40 and 46 have been allowed.

Claims 16, 43, 44 and 48 have been objected to as depending from rejected claims. Claims 16, 43, and 44 have been rewritten in independent form. Claim 48 and new claim 52 depend from claim 44. Accordingly, all of claims 16, 43, 44, 48 and 52 are submitted to be in allowable form.

Claims 1, 2, 4, 5, 9-11, 13-15, 17-21, 41, 42, 45, 47, 49, 50-51 and 53-61¹ are thus at issue, with all but new claims 50-61 having been rejected as follows:

- i. Claims 1, 2, 4, 5, 11, 13, 15, 17 and 45 have been rejected as being obvious under 35 U.S.C. §103(a) over Nakano *et al.* U.S. Patent No. 4,868,033 ("Nakano *et al.*") in view of either one of Mast U.S. Patent No. 6,501,059 ("Mast '059") or Fichtner U.S. Patent No. 3,302,632 ("Fichtner").
- ii. Claims 9, 10, 14, 18-21, 41, 42, 47 and 49 stand variously rejected as being obvious under 35 U.S.C. §103(a) over Nakano *et al.* and one of Mast or Fichtner in further view of:
 - a. Brown U.S. Patent No. 3,219,460 (claims 9-10).
 - b. Lafferty *et al.* U.S. Patent No. 6,102,281 or Mast U.S. Publ. No. 2004/0238535 ("Mast '535") (claims 14 and 49).
 - c. Minerich *et al.* U.S. Patent No. 5,593,610 (claims 18-19).

¹ Of these, claims 1 and 41 are independent. Claim 50 recites a method of providing heated food, including producing a container as in claim 1, placing foodstuffs in the container, and heating the container in a microwave oven.

- d. Minerich *et al.* and Middleton *et al.* WO 03/078012 (claim 20).
- e. Tilton U.S. Publ. No. 2009/0047525 (claim 21, 41 and 47).
- f. Tilton in view of Lafferty *et al.* or Mast '535 (claim 42).

Applicant respectfully traverses the above rejections insofar as they would be applied to the claims as presented herein, and similarly submits that new claims 50-61 are also allowable.

Specifically, **Nakano et al.** applies the laminate (10) into a forming (16) by using an insert injection molding technique (column 2, lines 9-10) (insert injection molding encapsulates inserts during injection of resins in an injection molding process). The **Nakano et al.** laminate (10) is inserted between dies (11, 12). That is, in Fig.15, a wrinkled laminate (10) is formed between the dies (11,12), with the laminate placed on the positive mould section (12) and molten thermoplastic synthetic resin poured through a nozzle (13).

Furthermore, the **Nakano et al.** laminate (10) is heat-shrunk and wrinkled ("*the metallic foil 3 will wrinkle at the resin layers 5, as shown in FIG.5, since the film 2 is not bonded there to the metallic foil 3*", column 3, lines 59-63). This is also explicitly mentioned in the abstract. Still further, **Nakano et al.** mentions that cracks or splits, formed in the metallic foil, are likely (column 1, lines 34-35).

Additionally, **Nakano et al.** is directed to shielding properties for housings or casings to electromagnetic interference (column 1, lines 39-42) or food or medical containers to antistatic and electromagnetic interference properties (column 1, lines 51-57).

Mast '059 and **Fichtner**, on the other hand, use a metal layer with at least one synthetic layer for microwave heating. **Mast '059** fabricates a heavy metal film onto a polymer barrier layer by using vacuum evaporation, sputtering or another suitable deposition method and selective demetallization by etching (column 5, lines 17-32). **Fichtner** describes a grid of different mesh, sandwiched between or embedded within two nested and adhesively secured together plastic vessels (column 2, lines 25-28).

It is respectfully submitted that it would not be obvious for a person of ordinary skill in the art to use the **Nakano et al.** insert (encapsulating) injection molding technology in combination with the *different* technologies of **Mast '059** (deposition method) or **Fichtner** (metal grid) for microwave applications in order to achieve the results of the claimed invention. When applying the **Nakano et al.** technology for microwave heating by considering the insert injection molding combined with a wrinkled laminate, thermoplastic synthetic resin could undesirably enter between the wall of the mould and the outer laminate layer. It is generally recognized that such wrinkled metalized foils would present sparking risks in microwave heating technology, and thus the combination suggested in the rejection is not only not obvious, but would be avoided by persons of ordinary skill in this art.

Using the IML (in mold labeling) technique of Applicant's invention (paragraph [0010] of the publication [U.S. Publ. No. 2008/0230176] of this application), a multilayer foil is typically placed in a mold half, while thermoplastic resin, like polypropylene, is poured against the wall of the laminated foil. The combination of IML and a smooth,

flat and wrinkle free foil² prevents thermoplastic resin from finding its way between the wall of the mold and the multilayer foil (page 2, para. [0017]; page 4, para. [0048]). Moreover, Figs. 5 and 6 of Applicant's application clearly show that the injection molding material 23 is bonded to the multilayer foil 7 (page 6, [0075]). This configuration clearly differs from encapsulation such as found in **Nakano et al.**

In short, **Nakano et al.** in combination with **Mast '059** or **Fichtner** do not teach how to construct a typically microwave applicable device, provided with a wrinkle free multilayer foil, provided against at least one wall of the applicable device by using an in mold labeling (IML) technique.

Further, it should be appreciated that Applicant's inventive use of the IML technique with flat foil is not merely different from the insert injection molding technique of **Nakano et al.** (e.g., by not entirely encapsulating the foil), and it is not merely advantageous in avoiding sparking which would occur were IML used with the wrinkled foil of **Nakano et al.** Rather, Applicant's claimed method is in other respects also significantly advantageous over any method properly derived from any combination of the teachings of **Nakano et al.** and **Mast '059** or **Fichtner**.

Specifically, a multilayer foil according to Applicant's invention has a rather complex configuration in relation to the microwave container. Using insert injection molding such as taught by **Nakano et al.** means a complete encapsulation of the foil with synthetics. This may be accomplished by forming an exterior microwave container wall in a first mold, bringing this exterior microwave wall in a second mold, inserting the foil,

² It is clear from the drawings, but in particular from fig.10, that the multilayer foil is **flat, smooth and wrinkle free**, as also disclosed in para. [0015] ("microwave radiation-influencing material layer . . . is quite preferably flat") and para. [0075] ("multilayer foil 7, which is flat in the starting situation").

closing the mold and injecting synthetics on the foil to encapsulate the foil. Alternatively, the foil may be positioned in a co-injection mould, with synthetics then injected around the foil. With the first option, the container wall must be configured according to the foil configuration, and the mold must be opened to insert the foil. With the second option, the foil is held in position during injection, which makes the configuration of the mold more complex and less feasible.

By contrast, in mold labeling (IML) according to the present invention allows the injection to be against only one side of the foil in the mold. This makes the configuration of the mold less complex and less expensive. Moreover, even if the manufacturing methods of **Nakano et al.** were to be modified to use IML instead of insert injection molding with its wrinkled foil, synthetics could enter between the mold wall and the foil, creating the previously noted risk of sparking. In short, modifying the teachings of **Nakano et al.** to instead use IML with its wrinkled foil would not be a viable alternative to a person of skill in the art.

Further, it should be appreciated that the in-mold label (IML) process of the present invention requires only a single, relatively inexpensive mold. By contrast, complete encapsulating, insert injection molding such as in **Nakano et al.** may require very complex co-injection molds³, or two molds⁴. Molds required for IML processes may thus be provided at much less expense, and production using IML processes may be accomplished faster than with the insert injection molding of **Nakano et al.** Still further, it

³ Complex co-injection molds function whereby plastic is injected via a first nozzle into the mold, then the mold opens a little bit and plastic is again injected via a second nozzle.

⁴ Dual molds in injection molding bring the object into a first mold and plastic is injected, after which the object is taken out the first mold (e.g., manually or automatically by robot) and moved into a second mold where the overmolding process takes place.

should be appreciated that the free surface of the label of the present invention may readily and advantageously be used for printing or decoration purposes, if desired.

The claims at issue as amended and presented herein more clearly define this difference. Specifically, independent claims 1⁵ and 41, and all the dependent claims⁶ at issue, now specifically recite that the multilayer foil is "flat, wrinkle-free", and that one side of the multilayer foil is bonded to a remaining portion of the container part "by in mould labeling". Further, it should be appreciated that claim 50, which recites a method of providing heated foodstuffs, specifically recites heating in a microwave oven, which action is the one which would risk sparking if any combination of **Nakano et al.** with **Mast '059** or **Fichtner** were used as discussed above.

⁵ Note that claim 1 has also been amended to remove the recitation of at least one hole in the microwave radiation-influencing material layer. That limitation is now included in new claim 51, which depends from claim 1, as well as new claim 52 which recites a plurality of holes. Claims 9-10 have accordingly been amended to depend from claim 52.

⁶ New dependent claims 54-61 all variously depend from claim 1 and recite further characteristics of the material layers of the provided multilayer foil.

In view of the above, rejected claims 1, 2, 4, 5, 9-11, 13-15, 17-21, 41, 42, 45, 47, 49 as presented herein, and new claims 50-61, are submitted to be allowable. Thus all of claims 1, 2, 4, 5, 9-11, 13-21 and 39-61 are submitted to be allowable. Early notification to that effect is respectfully requested.

Respectfully submitted,

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